10 Topic Proposal for the Asia-Pacific Regional Process

- **Water for Shared Prosperity in Asia and the Pacific Region**

This document serves as a supporting tool to organize the regional process in our region, jointly, consistently, effectively, and impactfully.

Please kindly review the proposal and provide:

- **Up to 3 major gaps that need to be bridged in order to achieve related SDGs;**
- **Up to 3 bullet points of the key hurdles that need to be overcome to advance the accelerated deployment of solutions;**
- Up to 3 best practice cases that have made the case to achieve impacts and
- Up to 3 recommendations of actions and solutions to scale impacts with collaboration and partnership, locally, nationally, and cross-regionally.

The general framework to help shape the narrative shall cover at least the four key interlinked and interactive elements in the Kumamoto Declaration and other political statements in our region:

- **Science and technology: innovation in technological solutions, expertise, education and talents, digital infrastructure and AI-enabled solutions;**
- **Governance (including gender and social equity aspects): laws and regulations, transparent and accountability, emerging governance models such as bioregional governance;**
- **Finance: innovation in finance and business model, expertise and capacity, cooperation and partnership; and**
- **Culture: indigenous knowledge, people and philosophy, local innovation.**

1 Water Security and Prosperity **(a) sound water supply and demand management, (b) circular economy in the water sector and non-conventional water resources, and** **6. knnowledge and Innovation (a) promote Smart Water Management and technological innovation, (d) upscale water information systems** **Discussion framework Proposal** **1. Smart Water Management: Opportunity and Challenges**
Digital solutions and AI can help address the pressing water securityconcern in Asia and the Pacific region. Faced with challenges arising from rapid urbanization, climate

change, aging infrastructure, weak governance systems, and limited access to and control over clean water, the region shall embrace the game changer of Information and Communication Technologies (ICTs) and AI to tackle water crisis.

To get there requires obstacles removed in most developing countries in the region that block fast adoption of "smart" technological solutions due to constraints in obtaining core infrastructure services for water supply and drainage as well as capacity and human capital.

This topic is expected to discuss the key challenges and opportunities in the age of AI, such as:

- how cities and communities can leverage these technologies to enhance resource and service efficiencies under changing socio-economic conditions and ensure sustainable water supply for their residents, particularly the most marginalized communities;
- how to encourage active stakeholder involvement to deliver tailor-made ICT solutions in line with the situations on the ground;
- how these countries can leapfrog conventional approaches and directly embrace innovative technologies to address water security challenges effectively;
- how cities and communities can improve service delivery efficiencies and empower residents to adopt local policies for sustainable water management by leveraging big data and smart solutions; and
- how can the advancements in remote sensing technology, Geographic Information Systems (GIS), sensor technology, Internet of Things (IoT), and AI be leveraged to contribute significantly to the prediction of water supply within a specific river basin, facilitating effective water governance planning,how can advanced technologies be applied in water processing and monitoring water distribution to minimize water loss rates.

Besides, other core issues include capacity building and Technical Support for marginalized communities as well as women and youth groups in accessing ICT; and supporting tertiary education systems to include “smart water” related ICT and AI programs.

1 Water Security and Prosperity (c) Water for Agriculture

Discussion framework Proposal

2 Addressing Water Scarcity in Agriculture: Rational use of agricultural water

according to the basin's characteristics or Addressing Water Scarcity in Asia and the Pacific: Effective Tools for Sustainable Agricultural Water Management"
Illustrating the dynamic nature of water scarcity across Asia and the Pacific using showcases, this topic provides knowledge on how each sub-region can effectively address water scarcity issues through effective water management tools such as sound water accouting and sound allocation framework, helping farmers adapt to water scarcity, reusing wastewater, sustainable groundwater management, and efforts to restore water quality. This topic will also showcase the opportunities for the adoption of more sustainable agricultural practices that optimize water use and improve water efficiency, such as realizing real water-saving techniques, drip irrigation, crop diversification, and soil conservation. The discussion framework will also recognize the critical nature of effective governance in addressing the challenges of growing scarcity in agriculture. This is particularly important in the region given the large proportion of informal, cultural, religious, and other customary water uses. A sound governance structure which acknowledges such water tenureship in decision-making is imperative to tackle water scarcity. In conclusion, the topic offers countries in the region a viable pathway towards achieving long-term sustainable water management, considering the requirements of agricultural water use on the ground, mitigating the impact of the water crisis, addressing increasing demands from various sectors, and upholding the imperatives of food security and ecosystem health.
2 Water for Humans and Nature **(d) Access to water sanitation and hygiene for all** **Discussion framework Proposal** **3 Sanitation improvement in Asia and the Pacific**
According to the SDG Profile Report 2023 published by the ESCAP, since 2015, remarkable strides have been made in enhancing sanitation across Asia and the Pacific: - Approximately 549 million people have gained access to at least basic sanitation services, resulting in a rise in coverage from 74 percent in 2015 to 82 percent in 2020. - Moreover, the coverage of safely managed sanitation services has also seen improvement, increasing from 48 percent in 2015 to 59 percent in 2020.

- In rural areas, efforts to combat open defecation have shown promising outcomes, with the prevalence declining from 20 percent in 2015 to 12 percent in 2020.

However, achieving the 2030 target for safely managed sanitation (target 6.2a) requires accelerating progress by 1.9 times. It calls for a paradigm shift and the adoption of new approaches to expedite sanitation improvement.

Therefore, this topic aims to present a collection of diverse case studies that showcase how different countries and communities have embraced the challenges and innovate alternative solutions, particularly innovative sanitation solutions and good management practices.

These studies will explore technical alternatives and effective ingenuity employed by different individuals and groups, urban and rural men, women and youth, to ensure the safe management of human waste along the entire service chain.

Additionally, the discussion will focus on establishing an enabling environment, encompassing institutional, regulatory, and financing arrangements as crucial components, including aspects of transparency and accountability. The primary emphasis is on viable management and governance systems, particularly for on-site sanitation, in conjunction with sustainable infrastructure development and management.

By integrating successful technological, governance and cultural practices from diverse countries in the Asia-Pacific region, the discussion will demonstrate how sanitation innovations can be effectively adapted to different local contexts. The discussion also aims to address the governance arrangements needed to achieve City-Wide Inclusive Sanitation to ensure that the needs of the most marginalized communities are addressed.

3 Water for Humans and Nature (a) Water quality improvement

+ 1 (b) circular economy in the water sector and non-conventional water resources

Discussion framework proposal

4 Diverse wastewater management challenges and the innovation

Untreated and inadequately treated wastewater significantly threatens human health and the environment in Asia and the Pacific region. The severity of this challenge is exacerbated by rapid urbanization, strained infrastructure, and inadequate wastewater treatment in urban and low-income areas. Socio-economic factors further constrain the unequal access to effective wastewater management, elevating the risk of diseases like cholera and dysentery in vulnerable communities.

This discussion will delve into actions and solutions to bridge the identified gaps from the perspectives of innovation in science and technologies, governance, finance and culture, with a particular focus on how to effectively tackle industrial wastewater management and advance a circular economy. It aims to provide context-specific solutions for each sub-region.

The gaps to bridge and opportunities to seize:

While some progress has been made in certain Asian countries, wastewater management remains a low priority. Recycling treated wastewater holds promise as a valuable source of water, energy, nutrients, and recoverable materials. Adopting affordable treatment technologies can further facilitate energy production, fertilizer generation, and safe water for non-portable uses, aligning with sustainable development goals for water and sanitation.

The Hurdles to Remove:

Political will and investment are crucial to address these issues. Furthermore, neglecting improved wastewater management is economically imprudent, overlooking the potential of a circular economy that emphasizes resource recovery.

Zooming in on Innovative Solutions and Actions:

The sub-regional processes will dive into some specific innovations, sometimes disruptive, that, if deployed to scale, shall help tremendously address the challenges, such as:

- Data-driven approaches and AI-enabled innovation
- Innovative financing mechanisms that encompass using existing funds more effectively, mobilizing more private capital, and blended financing
- Improving access to wastewater treatment facilities and services
- Promoting water recycling and reuse at local level
- And capacity building for local political actors.

4 Water for Humans and Nature

(b) Conservation and restoration of freshwater ecosystems and biodiversity and

(e) IWRM

Discussion Framework proposal

5. The Future of Green Water Infrastructure Harnessing the Power of Nature

It will discuss the roles of green infrastructure as a nature-based solution (NBS) and its harmonization with grey infrastructure. The aim is to explore the pathways derived from applying NBS within the existing urban river basin landscape in Asia and the Pacific

and integrate the relationships between hydrological and biological processes at different scales to improve water security, enhance biodiversity and further opportunities for sustainable development by lessening ecological threats and maximizing harmony within catchment processes. It will include a discussion about the methodologies for implementation, institutional arrangements, measurement approaches, cost-benefit analysis, and effectiveness evaluations, comparing them to the "do nothing" approach and conventional grey infrastructure.

3 Disaster Risk Reduction and Management
(address whole Sub-theme 3)

Discussion Framework proposal
6. Basin Management by all for Disaster Risk Reduction and Management

Asia and the Pacific remain the most disaster-prone region globally. Problems of climate change and related melting of glaciers and snowfields, reduction of runoff and fluctuation of water content of the rivers, increased frequency and extremity of natural disasters, including droughts, floods, mudflows and landslides are of particular concern in the region. Securing funding for disaster risk reduction, resilience building and adaptation measures, as well as monitoring of glaciers and snowfield remains a persistent challenge. Each nation faces various challenges to addressing disaster risk in each step amidst an uncertain future.

The discussion on disaster risk reduction and management in Asia and the Pacific Regional Process aims to foster the exchange of action-oriented approaches. These approaches encompass critical steps, from enhancing risk awareness and identification to formulating countermeasures (e.g. research and innovation, risk assessment and mapping, early warning system, disaster risk adapted land-use planning, disaster preparedness and response, capacity building and knowledge sharing, nature-based approach, etc.), securing financing, promoting multi-stakeholder engagement and awareness, capacity building and ensuring on-site implementation, and building sustainable resilience. This inclusive approach applies not only to river measures but also to the entire basin, involving multi stakeholders at different levels.

4 Governance and hydro diplomacy
(d) Ensure active stakeholder involvement and public participation, etc

Discussion framework proposal

7. Empowering Youth Leadership in addressing Water challenges in Asia and the Pacific

In Asia and the Pacific, various countries have taken steps to provide water education for youth. However, there exisists, in general, an inadequacy in comprehensive programs that effecgtively promote the exchange of experiences, lessons, and good practices among young people in the region. Political will and commitments are lagging behind. Thus, the Asia-Pacific regional process creates a unique opportunity for leading youth innovatiors to come together, learn from each other, and collaborate for larger impact.

The primary objective is to make the invisible water security challenges visible by empowering youth leadership, espeically young women. It will discuss the pathways to develop meaningful intergenerational partnerships, including the strength and resilience of youth-government collaborations in the water sector to address data gaps, etc., by harnessing the potential of young people to leverage innovative technology, youth as catalysts to reach marginalized communities and tools for water security and resilience.

By developing the commitment, tools and knowledge with youth leaders to address water challenges effectively, we can optimize human resources and pave the way for more sustainable and inclusive water resource management, ultimately contributing to achieving the Sustainable Development Goals, and water for shared prosperity beyond 2030.

5 Governance and hydro diplomacy

(a) Enhance international collaboration at all levels, (b) foster decentralized cooperation, (c) strengthen cross-sectoral dialogue and cooperation, (d) Ensure active stakeholder involvement and public participation

+ 2 Water for Humans and Nature (e) IWRM, etc

Discussion framework proposal

8. Transboundary water cooperation for Sustainable, Resilient, Inclusive Sound Water Cycle from Sourceto Sea

According to the 2022 IWRM Survey (Progress Assessment of SDG 6.5), the Asia-Pacific region has significantly progressed in Integrated Water Resources Management (IWRM) planning. However, many countries still face limitations in implementing IWRM policy instruments, primarily due to inadequate monitoring, poor inter-sectoral coordination, insufficient data, lack of financing, and limited human resources and capacity. Traditional IWRM plans formulated at the national and provincial administrative level

do not effectively address the needs of both local communities, marginalized people and the environment, as well as disaster risk reduction and management.

Furthermore, the mountain regions are undergoing tremendous changes, mainly fueled by climate change and other anthropogenic activities, and these changes are becoming challenging to manage. For example, ICIMOD's 2023 report, 'Water, ice, society, and ecosystems in the Hindu Kush Himalaya (HKH): An Outlook' states that for a global warming level between 1.5°C and 2°C the HKH glaciers are expected to lose 30%-50% of their volume by 2100.

The cryosphere is an integral part of the biosphere and plays a major role in the well-being of people. It is thus important to understand the economic value of water stored in glaciers and snow. Changes in the cryosphere affect water availability, food security, and human settlement both upstream and downstream. The melting of the glaciers can also unleash catastrophic impacts on communities downstream through phenomena like Glacial Lake Outburst Floods (GLOFs), flash floods, landslides and avalanches. Their impacts are often transboundary.

To proactively overcome the conventional IWRM, it is essential to understand the needs of diverse stakeholders throughout the basin from upstream mountain (Source) to Sea, integrate planning, and promote transformative water governance and collaborative efforts among diverse stakeholders.

In this topic, we will discuss measures to promote transboundary water cooperation by all and coordinated actions to build a sustainable, resilient, and inclusive society where no one is left behind at each basin level, sharing good practices about sound water cycle management from source-to-sea in each basin of each sub-region.

5 Sustainable Water Finance (e) Secure and Increase funding to prevent and overcome water-crisis, water disasters and enhance climate resilience

Discussion framework proposal

9. Mobilizing Water Finance for Climate Adaptation and Disaster Risk Management

Climate change-induced disasters are becoming more frequent and intense in Asia and the Pacific. Unless we fundamentally change our approach to building resilience to disaster risk, temperature rises of 1.5°C or 2°C will make adaptation to the threat of disasters unfeasible. Disaster risk could soon outpace resilience in Asia and the Pacific.

Disaster risk financing needs to be dramatically increased, loss and damage mechanisms analyzed, and financing mechanisms scaled up.

In a constrained fiscal context, we must remember that upstream investments are far more

cost-effective than spending after a disaster. We must use existing funding more effectively and tap innovative financing mechanisms to close the gap. Thematic bonds, debt for adaptation, and ecosystem adaptation finance can help attract private investment, reduce risk, and create new markets. These instruments should complement official development assistance and national funding, while investments in improved governmence and management, and use of digital technologies improve the efficiency, transparency, accessibility, and accountability for of use of adaptation financing. In Tandem digital literacy needs enhanced where necessary.

6 Knowledge and innovation

(b) Respect and value indigenous, traditional, and community-based knowledge systems and promote integration of their practices into existing water management policies

(e) Enhance access to education and training on water and 3H, notably on new concepts

+2 Water for Humans and Nature (e) IWRM

+ 4 Governance and Hydro diplomacy: (b) Foster decentralized cooperation between river basin commissions, regional entities, local authorities, local communities, corporate social responsibilities

Discussion Framework proposal

10. The roles of Culture in solving water challenges

The Asia-Pacific region stands out from the rest of the world with its cultural diversity and locally-specific history. Here, cultural norms and traditions can impact the utilization and management of water resources. Traditional water management perspectives, such as water-sharing mechanisms, may provide answers to current climate-related issues. However, it is essential to incorporate a gender and social equity perspective to empower women and marginalized groups. Exploring the intricate interplay between culture and water from a broader and deeper perspective is crucial.

By fostering a deeper connection and integration between water and culture and acknowledging water as an invaluable asset of the basin, we can preserve the diversity of the entire region, drive innovation, and unlock potential economic opportunities.

In this topic, we will take a broad and deep look at the inter-relationship between culture and water in Asia and the Pacific and exchange information on culture and water in other basins to redefine the direction of solutions to water issues in each own basin. We will discuss how the Asia-Pacific region can become a sustainable and unique society by linking local culture and water to livelihoods, technology, governance, finance, and

economics.

Note:

The other topic proposal

11. Theme: Water security for prosperity and equitable development in the Himalayan region

The topics to include (i) climate change and water security scenario and pathways to resilience building (ii) water-energy-food-ecosystem (WEFE) nexus challenges and opportunities, (iii) inclusive water governance, (iv) gender and social inclusive approaches to managing water challenges.

Descriptions:

This theme will focus on water security challenges in the Himalayan region and transformative actions needed to address them in holistically. It will provide a space for researchers, policymakers, practitioners and investors, and local communities for sharing insights, lessons learned, and challenges for achieving water security in the context of climate change and socio-economic drivers. The countries of Himalayan region is facing a number of water challenges such as floods and droughts, depletion of groundwater, drying up of springs, land use changes, poverty, and environmental hazards, and inequity in access to and control over water resources and decision-making. Lack of scientific knowledge and science-based policy and practices, water systems analysis, weak governance, inadequate capacity to deal with water crisis using a system approach, lack of understanding of water challenges and solutions beyond 'technologies', managing water risks by comprehensive scientific data and tools, and gender and social inclusion issues of water management are some of the challenges the region is facing. There is also a lack of enabling environment, including a multi-stakeholder driven policies and practices to manage water resources holistically.

In addition, water, energy, food, and ecosystems (forests and biodiversity) are highly interconnected, requiring nexus approaches. Water serves as a vital link between these systems and plays a crucial role in food and energy security, promoting inclusive growth, and gender and social inclusive development. The stress of climate change and the hydro-meteorological uncertainties are exacerbating water challenges. Climate impacts, including increased frequency and intensity of floods and droughts, decreasing soil moisture due to rising temperature affecting agriculture, biodiversity. Delays in seasonal precipitation patterns are posing a threat to food security, gender equality, and inclusive socioeconomic development. Creating a more water-secure world, particularly for the smallholder farmers, the poorest and marginalized groups, cannot happen with a business-as-usual approach to investment, policymaking,

programs/projects implementation, research/innovation, nor can it happen by addressing SDG6 in isolation. Transformation of water systems to enhance water, energy and food security is key to climate action, empower women and marginalized groups, and is the basis for a climate-resilient future.

This theme will provide (i) an overview of climate risks to water security, including drought, floods, and human vulnerability in the countries of South Asia and will discuss approaches to address these systemic issues at scales, (ii) present insights and good practices on inclusive governance, gender and social inclusive water management in the region, (iii) share challenges and opportunities for breaking the siloed approaches to water management for ensuring water security, equality, women and youth's empowerment and prosperity.

12. Challenges of Aging Water and Sanitation Facilities in Asia and the Pacific: Towards Sustainable Operation and Maintenance

In Asia and the Pacific, rapid economic growth and urbanization present significant challenges concerning the aging and maintenance of water and sanitation facilities. Building a sustainable society necessitates a thorough understanding of each region's unique circumstances and challenges. This topic addresses these issues from five key aspects, fostering comprehensive discussions.

1 Aging and Modernization of Facilities

The degree of aging in water and sanitation facilities varies among Asian countries, and the pace of modernization is diverse. While some countries have made significant progress in modernization, others grapple with severe aging issues. A potential divergence exists in challenges to be addressed at a regional level.

2 Investment and Funding Challenges

The substantial funding required to maintain and upgrade water and sanitation infrastructure raises questions about whether Asian countries can secure sufficient funds. Addressing funding challenges and establishing sustainable financial resources are pressing issues.

3 Technology and Skill Shortages

Challenges in acquiring the latest technology and expertise are becoming increasingly serious as technological advancements progress. Strategies to promote technology adoption and secure skilled human resources through enhanced international cooperation are necessary.

4 Rapid Urbanization and Infrastructure Lag Rapid urbanization significantly impacts water and sanitation facilities. Challenges arise due to the swift expansion of infrastructure, underscoring the urgency of urban planning and coordinated infrastructure development.

5 Environmental Impact and Sustainability water and sanitation infrastructure operation significantly affects the environment. Sustainable facility management and environmental considerations are urgent. Implementing strategies that minimize environmental impact while efficiently utilizing resources is imperative.

In light of these challenges, it is crucial to engage in comprehensive discussions about the current status and challenges facing water and sanitation facilities across the region, explore sustainable solutions, and lay the groundwork for effective maintenance and management.